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AMBROISE PARÉ—MAN AND SURGEON.

BY

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W. G. TURNER, M.D., M.R.C.S. (Eng.).

Mr. President and Gentlemen:—

The eighty years of Ambroise Paré's life, 1510 to 1590, were spent in times which have had one of the greatest influences on the world's history. The political aspect of Europe varied so frequently in that space of time and battles were being so constantly fought, that it certainly appears marvellous, in these relatively studious times of ours, that a military surgeon, who followed faithfully the fortunes of his native land, would have physical and mental energy to collaborate the crude surgery of his time and raise it above the mere superstition then prevalent.

At the time of his birth Louis XII reigned in France, and Henry VIII was King of England. During his lifetime the crown of France passed from Louis XII to Francis I, and finally in succession to his three sons, Francis II, Charles IX and Henry III. Shortly before his death and after the ever memorable Siege of Paris, Henry IV of Navarre came to be in the ascendant.

By events in English history his life may be measured by the fact that he was born three years before Flodden Field, and that he died sixteen months after the destruction of the Armada. He was ten years of age when Luther burned the Pope's Bull, and forty-eight when France finally expelled England from her shores. The greatest wars of the times, however, were those against Germany, Italy and Spain, and the greatest enemy of France at that time was the Emperor Charles V. Conditions in France were steadily becoming worse and worse. On the one hand the steady growth of the Huguenot party, until it was fully organized under the Prince de Condé and Admiral Coligny, on the other, this influence for good was outbalanced by the pernicious intrigues of the Court. This last was dominated by the Queen Mother, Catherine de Medici, the Florentine, who quite controlled the actions of

her three sons and the politics of the day. Such were the despotic and fickle rulers under whom Paré lived.

In 1562 began the long and disastrous Civil War between Catholic and Huguenot.

Among his contemporaries mention must be made of Ignatius Loyola, Luther and Erasmus, Calvin and Knox, Shakespeare and Rabelais, Raphael and Titian, Paræcelsus, Sylvius and Vesalius. Malgaigne, in his able and learned introduction to the works of Paré, has stated that the way was cleared for his coming and all Europe seemed waiting and watching for the advent. A glance at the condition of surgery before he became the master is necessary at this point:

From the time of Celsus there was a period of constant decline. The European schools had set tradition and authority on high above honest observation and experiment; then also the Church forbade the shedding of blood to the physicians and kept surgery at the level of a low unorganized trade, placing thus almost a premium on Charlatanism. Guy de Chaulliac was the shining light in this period of decadence. He wrote his "Grande Chirurgie" in 1393, when physician to Pope Urban V, at Avignon. His advice to the surgeon may be well quoted: "Let the surgeon be well educated, skilful, ready and courteous; let him be bold in these things that are safe, fearful in those that are dangerous; avoiding all evil methods and practices. Let him be tender with the sick, honourable to men of his profession; wise in his predictions; just, sober, pitiful and merciful; not covetous and extortionate, but rather let him take his wages in moderation according to his work and the wealth of his patient and the issue of the disease and his own worth."

John of Gaddesden and John Ardern fought the good fight to a lesser extent in England. These men served the cause of surgery in two ways: they made a stand against the Arabian School following the teaching of Averroes and Avicenna, "the prince of physicians"; and, secondly, they wrote or translated into their mother tongue, endeavouring to return past tradition to the pure teaching of Hippocrates. The introduction of printing provided the means of propagation. The new era was fast approaching. The writings of the Greek school had been spread abroad in the language of the various countries, largely through the activity of the Italian printing houses.

And now we come to that brilliant scholar of Italy, Antonio Benivieni, of Florence, 1440 to 1502. Educated at the famous School of Padua, he was a surgeon of repute, but he lives to posterity as the writer of the first work on pathological anatomy, "De Abditis Morborum Causis." This little book was collaborated after his death by his brother in

Florence and published in 1507. By his brains and the energy of the following the free thought in medicine was finally established.

Paræcelsus, the great iconoclast, then came on the scene nearly a century after Guy de Chaulliac. A radical who was neither courteous, pitiful nor sober; he was the incarnation of the spirit of the free thought in medicine which broke the Arabian schools and struck at the solemn rubbish taught in the universities. The books of the former he publicly burned as an introduction to his lectures at Basel in 1526. Paræcelsus demanded, "Is not medicine a plausible pretext to extract money from the purses of imbeciles?" To correct this impression he visited every school of any learning throughout Europe: Spain, Portugal, England, Denmark, Poland, Prussia, Hungary and Transylvania. In fact, from every source where he thought some fact might be learned. From physicians and surgeons, alchemists and soothsayers, noble and humble, everywhere he sought "what were the best and most reliable remedies which were being and had been employed to cure diseased conditions." His chief works were combined in "Grande Chirurgie," three volumes appeared in 1536, and the remainder after his death in 1565. He also wrote a volume entitled "La Petit Chirurgie."

As to the condition of surgery in the fifteenth century in France, it was depicted by its rank in Paris. There the surgeons were combined under the College of St. Cosmo as a governing body. This body was not under any jurisdiction of a university and claimed great antiquity. In fact, some manuscripts gave authority to the statement that St. Louis of France founded this brotherhood in 1208, two years before his death. To further the same he gave them property on condition that they would gratuitously treat the sick poor of the district. The college gradually assumed importance, and in 1370 granted the Licentiate and Baccalaûreat degrees, which up to that time had been entirely reserved to the university faculties; later was granted the title of Master of Surgery. The candidate for surgery was regularly apprenticed to a master of surgery who had been received at least four years. There he worked until he obtained his Baccalaureat after examination. He then took the oath of the profession and paid a franc to enter the brotherhood. Certain other statutes had to be observed: to the clerk he had to give two francs silver and a coat, then twelve golden crowns were paid to the magistrate for his license; to each of his examiners a good hat, double dyed in scarlet, as also gloves to match, and, finally, on his departure from the Hotel Dieu, a solemn dinner was required of him.

This surgical body attempted to control the whole surgical practice of Paris, and they admitted as few as possible into their ranks.

The Barber Surgeons as a class originated in the first half of the thirteenth century, and by the surgeon were given the right of bleeding and scarification. These being of a lower rank of surgery and yet wielding the knife, caused a certain amount of contempt at the hands of the physicians, so that in a short time the students of the faculties held as undignified most operations, except those for stone, hernia and cataract. Thus, gradually throughout Europe, general surgery fell into the hands of the Barber Surgeons. The St. Cosmo clique, however, through its royal edict became more or less fatal to the Barber Surgeons' practice in Paris, and this caused constant bickering, until 1390 the university took hold of the matter, especially the faculty of medicine, and readjusted conditions. Under Louis XI, Olivier le Dain, his barber and favourite, proved a dangerous adversary to the surgeons.

In 1494 the faculty in its teachings to the barber surgeons read certain authorities, chiefly Guy de Chaulliac, to the class in Latin, followed by explanatory notes in French. In addition anatomy was demonstrated, and in order that this could be carried out, judicial permission was granted to purchase cadavers from the various gibbets. The barber surgeons gained further favour with the faculty by observing the statutes of the same and refraining from the practice of medicine unless under the advice of a physician, and when choosing a consultant, giving preference always to one of the masters of the faculty. By this means and owing to the bigoted policy of its order the power of the college of St. Cosmo was very much reduced, until in 1510 a rearrangement was made by the faculty and the two orders of surgery were stated definitely.

Outside the city of Paris the barber surgeons held the controlling hand in surgery. The chief orders were those of Montpelier, Tours, Rouen, Bordeaux and Toulouse. They became very aggressive, and so frequently usurped the rights of the physician, that in 1496 Louis XII, in a royal edict, limited their practice according to the laws of the university.

As to military surgery: In the army there was no surgical organization. According to the feudal system, each captain or noble recruited his men, and when he had the foresight to have a surgeon or surgeons in attendance, these were attached to his person and not necessarily to his troop. Even when the kings in the fifteenth century enlisted their armies no provision was made for a surgeon until 1405 this privilege was granted.

The surgeons of St. Cosmo would not leave their lucrative practice for the somewhat precarious existence in the field, and the barber surgeons then stepped in to fill the demand. Thus they gained in favour, an example of which might be cited in the case of Louis XI and his

favourite, Olivier. Charles the Bold had no other surgeon in his domains except barber surgeons, and among his troops a barber surgeon was attached to each body of 800 men. This gave him twenty-two barber surgeons in an army of 20,000 soldiers.

Time and place do not permit of a review of the prevalence of the various forms of charlatanism which were then practised, especially in the country districts. The control of Catherine de Medici by her *parfumeur*, Réné, is but an example of this.

From the above brief context it will be observed that the surgical revival originated in Italy, and Germany followed suit, chiefly owing to the influence of Paracelsus. The progress of wars brought benefits in the path of the conquerors; chief among these was the removal of the library of Florence by Charles VIII and that of Pavia by Francis I. The art of printing followed in the path of the libraries, and Paris, supplanting Italy, became the greatest publishing centre of the century.

And now appears on the scene Ambroise Paré, and as Malgaigne justly stated: the time was ripe and all the world was waiting for a practical and observant mind such as he possessed,

> "Thundering and bursting
> In torrents, in waves,
> Carolling and shouting
> Over tombs, amid graves—
> See! on the cumber'd plain
> Clearing a stage,
> Scattering the past about,
> Comes the new age." (*Matthew Arnold.*)

Ambroise Paré was born in the little village of Bourg-Hirsent, close to Laval, in Maine, in the year 1510. His father was a "coffretier." He had a sister, Catherine, who married Gaspard Martin, a master barber surgeon of Paris a brother, Jehan, who was master barber surgeon at Vitré, in Brittany, and another brother who followed his father's trade. Gaspard Martin died after an amputation performed by Paré, and was one of the first cases where ligature was employed. The brother at Vitré is mentioned in Paré's works for his skill in detecting the sham diseases of professional beggars.

As far as can be learned, he went to the village school and received a smattering of Latin from the chaplain of one of the seigneurs of the locality. The stimulus to take up surgery was received when a surgeon, Laurence Colot, came down from Paris to perform an operation and Paré assisted him. Shortly afterwards he went to Paris to try his fortune. The masters under whom he served his apprenticeship are

not known, nor is it certain whether he served all his time in Paris or not. From a skit published long after his death some idea of the lean years of Paré may be gleaned:

"The cock has scarce done crowing when the apprentice must arise, sweep and throw open the shop lest he lose the least payment that the tricks of the trade may bring him—some early bird to be shaved. From this time on till two o'clock there are fifty customers. He must comb the wigs, hang about the parlour or the staircase selling his stock, put folks hair in curl papers, cut it or singe it. Towards the evening, if the young man wishes to improve his mind he will take a book, but the dullness and weariness of learning which comes of his not being used to it soon brings him to sound sleep, with interruptions from the door bell warning him that some rustic wants his hair cut. Never did any one ask so much of a servant, never 'in the Islands' did a white man seek so greedily to get profit out of a black man as a master barber surgeon tries to make gain out of the bread and water he gives his apprentices. If it is not their afternoon off he will not let them leave the shop, not even go to lecture for fear of losing the worth of some beard which, perhaps, will not come after all. That is why, out of kindness, the professors give their lectures to these unhappy young men at four o'clock in the morning."

These lectures were delivered by physicians, not by surgeons, and in Latin, as the dignity of the university forbade the use of French, and the apprentice did not understand Latin. The value of the teaching of these pedants can readily be imagined.

In 1533 he was in Paris and the plague was raging there. Paris was a walled city of about 150,000 inhabitants; the criminal class was very numerous, quite 6,000 to 7,000, and the paupers numbered 8,000 to 9,000.

He worked at the Hotel Dieu, and while yet unqualified was given a resident appointment, "compagnon chirurgien." For three years he lived in the hospital and here his true work began. Sylvius was one of his teachers, and Vesalius and he just missed meeting as students by a year or two; afterwards meeting in consultation over the case of Henry II. It is certain that during these years he had abundance of work. He had charge of the patients, privilege of making dissections and post mortem examinations, and some opportunity of teaching the students. As an example to any interne he worked well with everybody in the hospital.

Full of practical knowledge he left his beloved hospital and faced the question of the future. From this time forward, for over thirty years, his life followed two separate channels: with the army in times

of war, at Paris in the intervals of peace. As stated before, the army medical service was very crude, and in the train of the barber surgeons followed a host of dressers and quacks. Gunshot wounds were supposed to have special virulence and were treated with boiling oil until Paré after his first forty-eight hours of fighting saw the folly of it and stopped it. He attached himself to one great man and then another, until in 1552 he was appointed as one of the King's surgeons in ordinary. During this time his fees were varied and somewhat romantic: a cask of wine, 50 double ducats, a horse, a diamond, a collection of coins from the ranks; "honourable presents of great value," from the King, 300 crowns and the promise that he would never let him want, a diamond from the finger of a duchess, a bag of gold and various others.

He qualified as a master barber surgeon in 1541 at the age of 31, after passing the two required examinations.

Here, with his admission to the Barber Surgeons ends the first chapter of Ambroise Paré's life.

Next comes the "Journeys in Divers Places," written in Paris long after the events, and published in 1585, in the Fourth Edition of his collective works.

This publication was the outcome of an attack made upon him in 1580 by Etienne Gourmelen, Dean of the Faculty of Medicine. This last had published a book on surgery in which he criticized Paré's method of ligature, and argued his case by an idiotic appeal to authority and tradition. The attack had an everlasting merit, as Paré embodied his reply in "Apologie et Traicté contenant les voyages faicts en divers Lieux; par Ambroise Paré, de Laval, Conseiller et Premier Chirurgien du Roy."

He cites cases and appeals to experience, concluding the argument with the statement: "That he had had good results by this method, and he had not discovered it by sitting in a chaïr, but by years of Practical work in Paris, and with the Army." The publication is of value also, as showing the wonderful vigour and spirit, and how he could hit out when roused. These Journeys should be read fully to enjoy them, as they describe briefly the romance of his thirty years' service, from 1537 to 1569. The account opens with the Journey to Turin, and describes his introduction to military surgery. One of his first cases occurred during the storming of the town, and was a captaïn named Larat, who had received an arquebus shot in the right ankle, "I dressed him and God healed him." Paré's natural powers of observation were displayed within forty-eight hours of his introduction to military practice. It came about in this manner: Ever since the arquebuss was first used in warfare such gunshot wounds were regarded as having

special virulence, according to the teaching of Jean de Vigo, and the treatment prescribed consisted in pouring boiling oil into the wound. The night after the first day's engagement Paré followed this method; but as the casualties were very numerous, he ran short of oil. To supply the deficiency he made a lotion composed of yolks of eggs, oil of roses, and turpentine. During the night he could not sleep owing to the worry that his default in cauterizing should be followed by bad results. Rising in the early morning, he proceeded to inspect his patients, and then, to his surprise, he found that those treated according to established methods were all doing badly, while those he had treated by his make-shift lotion were doing relatively very well. From that time onward, he followed his own method of treatment. While at Turin he heard of a famous lotion for the therapy of these wounds, but could not persuade the surgeon to give him the recipe. However, he was not to be baulked, and, at last, after two years, thanks to his persistency, supplemented by gifts and presents, it was obtained. This lotion was to boil in oil of lillies young whelps just born, and earthworms prepared with Venetian turpentine; but this puppy dog oil was discarded for Aegyptiacum, a preparation of mercury, during the Rouen campaign. After this campaign was over, others were on the tapis, now in Brittany, now in Normandy, and while at Boulogne, he recites the case of the Duc de Guise, which rivals that of "the crow-bar man" of Boston. The Duke received a lance wound which entered over the right eye, towards the nose, and passed out to the other side between the ear and the back of the neck. It was so firmly wedged in that a smith's pincers and much strength had to be used to draw it out. "Yet, by the Grace of God he was healed." On this occasion Paré met the great Coligny. These various expeditions continued, in all of which Paré worked diligently. In the one against Chateau le Comte, Henry of Navarre was in command of 30,000 men, and at the end of the campaign, he mentioned the work of Paré very highly in despatches, which led to his being inscribed as Surgeon in Ordinary to the King. His rising reputation can be clearly seen in the campaign at Metz, 1552. There the Duc de Guise was besieged by 120,000 Burgundians, and was faring very badly, so badly, in fact, that he begged the King to send Paré to him in order that the surgery might be properly attended to. By bribery and stealth, Ambroise managed to get into the town. The siege was a desperate one, and the casualties very heavy, as may be judged by the fact that of the Emperor's force fully 20,000 died from wounds or disease. Some of the subjects of the frescoes in La Sorbonne and the Hotel de Ville in Paris were painted from scenes at this period, as also the one in the Ecole de Medicine recently destroyed by fire.

Then follows a graphic description of the siege of Metz and the desperate defence of the French under the gallant Duc de Guise. He is the same warrior who bade Paré place his foot on his face in order to get purchase enough to pull out the lance head which had wounded him as mentioned above. His conduct during the siege placed him in an enviable position, and he left the city mounted on a fine bay horse, a present from Guise himself, with his man riding behind him on guard over his valise of instruments, salves and dressings. The towns *en route* were filled with wounded, hospital gangrene was rife and fever was raging. He helped wherever he had the time and arrived back in Paris about the end of January, when he began his lectures on anatomy. By 1552 the second edition of his book on Gunshot Wounds was finished and dedicated to the King., but his work was interrupted by another campaign.

The story of campaigns must be cut short to follow his life in Paris. Let him be viewed now, not as an army surgeon, but as a citizen of Paris, a peaceful gentleman, whose face got to be as well known in the streets as the face of the King himself, and much more welcome. In 1541 he was admitted as a master barber surgeon, and it is just half a century to the year of his death in 1590. The year of his admission he dined with Sylvius and discussed fully gunshot wounds. Sylvius urged him to write a book on the subject and this he fulfilled four years later. The traveller of to-day, after crossing the Seine to the Place St. Michel, may well study with interest the group of houses on the right just by the corner of Rue de l'Hirondelle, for there Paré lived and worked and collaborated his knowledge. The locality was well chosen as being near the Hotel Dieu and the Pré-aux-Clercs, where duels were frequent.

Within a few months he married Jehanne Mazelin, little being known of the circumstances which drew them together. His first two children died in infancy, the third, Catherine, survived the mother, who died in 1573. The family life, though so much disturbed by his many campaigns, was a happy and contented one. Though far from wars, he was quickly involved in the surgical strife waged so bitterly in Paris at this time. Mention has already been made of the triangular duel of the Faculty of Medicine, the St. Cosmo confraternity, or "Royal College of Surgeons," and the corporation of barber surgeons. He was admitted to the confraternity in 1554. In 1569 he had his controversy with Le Paulmier, a member of the Faculty, and in 1575, when he published the first edition of his collected works, began his conflict with the Faculty, which lasted almost to his death.

Paré was also a good man of business, as was shown by acquiring five houses in his immediate vicinity. These he filled with relatives. He also had a house in the Faubourg St. Germain and a property outside the city.

We have already mentioned how many kings Paré attended. In 1559 he was present in consultation over Henry II, who was wounded in a tournament by a pointless lance striking him over the eye. There was a great deal of "commotio," and he died on the eleventh day. The autopsy revealed an extensive hæmorrhage. Many consultants were in attendance, and the heads of four criminals were anatomized in the hopes of rendering some light on the case. Among those present was Vesalius, who had been brought from Brussels by Philip of Spain.

Francois II died within eighteen months of his father, and while attending him Paré showed his leanings towards the Huguenot cause. The King was suffering from an ear complaint at the time the Prince de Condé was on trial for his life. This had been brought about through the Guise ascendancy, combined with the influence of the Queen-mother, and by these combined forces was condemned to be beheaded. When Coligny heard the news he consulted Paré, pretending that he was ill, and to his questions about the King's illness, Paré replied that there was grave danger, but he had not mentioned it yet for fear of doing harm at the Court. Coligny, in reply, called attention to the desperate position of Condé if he remained silent; whereupon Paré notified the court, and in this way saved Condé.

The dark days in France were becoming still more gloomy. On Friday, August 22nd, 1572, the massacre of St. Bartholomew took place. The King, Charles IX was almost beside himself, and yet even in his frenzy he was careful to keep Paré in safety, as also his old nurse. It is stated that on that day the King told him that "now everybody must turn Catholic." Paré coolly answered him: "By the light of God, Sire, I think you remember your promise never to command four things of me: To enter again into my mother's womb, to look after myself in battle, to leave you service, and to go to mass."

The following year, Jehanne, his wife, died at the age of fifty-three, and a few months later he married Jacqueline Rousselet. The affluent air of this second marriage contract is very different from the poverty of the first; more money, but less romance.

This second wife of Paré bore him five children, of whom three daughters survived him; one of these, Catherine, married an official named Hédelin and the famous Abbé d'Aubignac was one of the sons of this marriage.

The death of Charles IX, from phthisis, was on Whitsunday, May 30th, 1574, in his twenty-third year. He had been under Paré's care

for pain and contracture of the arm after venesection, some time before 1569. He performed the autopsy and carried out the embalming in the presence of eight physicians and surgeons of the household. Any reader of the memoirs of Marguerite de Valois will readily judge of the intimacy of Paré with the Court and the high repute in which he was held by that fickle body.

In the following year began the long fight with the Faculty, which was waged over the publication of his collected works. It was a sort of Holy War for the deliverance of surgery from the bondage of medicine, and there is much amusement to be derived from the fatuous indignation and futile reprisals of his opponents after each succeeding defeat. These various editions came out in the following order: 1575, 1579, 1582 in Latin, and the last edition in 1585. This last is the most valuable as it contains his apologia and the Journeys. The Faculty offered no opposition to this last, thus acknowledging their final defeat in regard to publishing, but the supremacy of the physician survived in regard to practice. Quite a furore existed at this period for mummy dust and unicorn's horn; and the use of these was made the subject of a violent attack by Paré, who introduced the story of his friend, Guy de La Fontaine, concerning an interview with an Alexandrian Jew dealer in the same, and the source of his supply.

He was still young at seventy-two, and when he wrote the Apologia and Journeys he was seventy-five. The internal condition of France during his last years was desperate. A fool King and a dissolute Court were at the head of the State, to which was added the bitter rivalry between the Royal Faction and that of the Guises, which last, however, made way for the increase in power of the third party, the Huguenots under Henry of Navarre. Paris itself was full of beggars and criminals, when Henry, after his victory at Ivry, laid siege to it, and the plague was raging. The people were dying like flies, and one day the Archbishop of Lyon, leader of the League, who was furious against peace, met Paré at the Place St. Michel, amidst a crowd of dead and dying; and there Paré arraigned him for the misery caused by him and his followers. In 1590 Henry entered Paris, and a few months later Paré died, after seeing just a glimpse of a better future in store for France.

His works: The Dedication and Preface are interesting reading. Save art and politics, the works contain every possible subject,—Anatomy and physiology, medicine, surgery, obstetrics, state medicine, pathology, pharmacy, natural history, demonology, and much else. The breadth, insight and humanity of his writings, his infinite care for trifles, his clear headed sense are remarkable. The reader may well

note his clear directions for the making of a restorative draught, and the numerous devices adopted to give a plain diet and yet not a monotonous one. In bandaging, old, soft linen was employed, of certain lengths and widths, and without seams; and his dressings were clean and well washed. At the siege of Metz his four washerwomen were kept busy cleaning dressings by the fear of the whip. The rules for the comfort of patients show great care and insight. The discussion and treatment of the plague show most clearly his skill in practice. An example of brilliant surgical practice is cited in the case of the Marquis d'Auret, for whom he made his Journey into Flanders:—

In his own words he thus describes the "Status Præsens": "I found him in a high fever, his eyes deep sunken, with a moribund and yellowish face, his tongue dry and parched, and the whole body much wasted and lean; the voice low as if a man very near death; and I found his thigh much inflamed, suppurgating and ulcerated, discharging a greenish and very offensive sanies. I probed it with a silver probe, wherewith I found a large cavity in the middle of the thigh, and others round the knee, sanious and cuniculate; also several scales of bone, some loose, others not. The leg was greatly swollen and imbued with a pituitous humor . . . . and bent and drawn back. There was a large bedsore; he could rest neither day nor night; and had no appetite to eat, but very thirsty. I was told he often fell into a faintness of the heart, and sometimes as in epilepsy; and often he felt sick with such trembling he could not carry his hands to his mouth. Seeing and considering all these great complications, and the vital powers thus broken down, truly I was very sorry I had come to him, because it seemed to me there was little hope he would escape death."

And then followed the consultation with the other physicians and surgeons.

"Each said what he thought of the malady of the patient, and in conclusion they all held it hopeless. I told them them was still some hope, because he was young, and God and Nature sometimes do things which seem to physicians and surgeons impossible."

After this Paré went for a walk in the garden to think over the case, and after a time returned, and thus gives his opinion:

"To restore the warmth and nourishment of the body, general frictions must be made with hot cloths, above, below, to right, to left, and around, to draw the vital spirits from within outward..... For the bedsore, he must be put in a fresh, soft bed, with clean shirt and sheets..... Having discoursed of the causes and complications of his malady, I said we must cure them by their contraries, and must first ease the pain, making openings in the thigh to let out the mat-

ter..... Secondly, having regard to the great swelling and coldness of the limb, we must apply hot bricks round it, and sprinkle them with a decoction of nerval herbs in wine and vinegar, and wrap them in napkins; and to his feet an earthenware bottle filled with the decoction, corked, and wrapped in cloths. Then the thigh and the whole of the leg must be fomented of a decoction made of sage, rosemary, thyme, lavender, flowers of chamomile and melilot, red roses boiled in white wine, with a drying powder made of oak-ashes and a little vinegar and half a handful of salt..... Thirdly, we must apply to the bedsore a large plaster made of the desiccative red ointment and of Unguentum Comitissæ, equal parts, mixed together, to ease his pain and dry the ulcer; and he must have a little pillow of down, to keep all pressure off it.

And for the strengthening of his heart, we must apply over it a refrigerant of oil of water-lillies, ointment of roses, and a little soffron dissolved in rose-vinegar and treacle, spread on a piece of red cloth. For the syncope, from exhaustion of the natural forces, troubling the brain, he must have good nourishment, full of juices, as raw eggs, plums stewed in wine and sugar, broth of the meat of the great pot, whereof I have already spoken; the white meat of fowls, partridges' wings minced small, and other roast meats easy to digest, as veal, kid, pigeons, partridges, thrushes, and the like, with sauce of orange, verjuice, sorrel, sharp pomegranates; or he may have them boiled with good herbs, as lettuce, purslain, chicory, bugloss, marigold, and the like. At night he can take barley-water, with juice of sorrel and of water-lillies, or each two ounces, with four or five grains of opium, and the four cold seeds crushed of each half an ounce; which is a good nourishing remedy and will make him sleep. His bread is to be farm-house bread neither too stale nor too fresh. For the great pain in his head his hair must be cut, and his head rubbed with rose-vinegar just warm, and a double cloth steeped in it and put there; also a forehead cloth of oil of roses and water-lillies and poppies, and a little opium and rose-vinegar, with a little camphor, and changed from time to time. Moreover, we must allow him to smell flowers of henbane and water-lillies, bruised with vinegar and rose water, with a little camphor, all wrapped in a handkerchief, to be held some time to his nose..... And we must make artificial rain, pouring water from some high place into a chauldron, that he may hear the sound of it; by which means sleep shall be provoked on him. As for the contraction of his leg, there is hope of righting it when we have let out the pus and other humors pent up in the thigh, and have rubbed the whole knee with ointment of mallows, and oil of lillies, and a little eau-de-vie, and wrapped in black wool with

the grease left in it; and if we put under the knee a feather pillow doubled, little by little we shall straighten the leg....."

After this comes his after treatment.

"The following days I made injections into the depths and cavities of the ulcers, of Ægyptiacum dissolved sometimes in eau-de-vie, other times in wine. I applied compresses to the bottom of the sinuous tracks, to cleanse and dry the soft, spongy flesh, and hollow leaden tents, that the sanies might always have a way out; and above them a large plaster of Diacalcitheos dissolved in wine. And I bandaged him so skilfully that he had no pain; and when the pain was gone the fever began at once to abate. Then I gave him wine to drink, moderatetly tempered with water, knowing it would restore and quicken the vital forces. And all that we agreed in consultation was done in due time and order; and so soon as his pains and fever ceased, he began steadily to amend."

There were many drawbacks in Paris at that time: he had no proper knowledge of the circulation of the blood; no anæsthetics, no bacteriology, no knowledge of antiseptics. He had neither microscope, stethescope nor thermometer. But besides the lack of these essentials of the present day, other things stood between him and accurate pathology.

He had some belief of the influences that the stars had on the course of disease; that the plague was of divine origin; in spontaneous generation, as was the general belief of the time, and he judged this from the putrefactive changes occurring in wounds of princes as well as common soldiers. The terror of the powers of the air was a real one, and it is of interest to note that two hundred years later, in his own hospital, there was the same frightful mortality and the same fear of the air.

He had belief in devils, witchcraft and sorcery, and, on the other hand, the power of saints to cure disease, as well as the Royal touch to cure the King's evil. His fear of air infection was a very real one, both in surgery and the plague.

In practice some of his operations and methods were curiously modern. He understood and practised massage; he had quite a good method of producing local anæsthesia; he was opposed to immoderate bleeding; he knew the value of rest and silence for his patients. The Journey to Turin tells of his discovery of amputations through joints; and, later, he describes the use of the ligature in cases of amputation. He recommends good threads, two together, and a catch forceps, such as is now used by surgeons. This last was the result of direct observation of the ill effects and the frequency of secondary hæmorrhage following the use of the cautery His publications were:

1. The method of treatment of wounds made by arquebuses and other firearms, and of those made by arrows, darts and the like, also the burns made by gunpowder.—1545.

2. A short compendium of the chief facts of anatomy, with the articulations of the bones.—1550.
3. A second edition of the book on gunshot wounds, with additions.—1551-2.
4. The method of curing wounds and fractures of the human head, with illustrations.—1561.
5. Universal anatomy of the human body.—1561.
6. Ten books of surgery.—1568.
7. Treatise on the plague, small-pox and measles; with a short account of leprosy.
8. Five books of surgery.—1572.
9. Two books of surgery.—1573.
10. Discourse on mummy, poison, unicorn and the plague.—1586.
11. Reply to an attack against his discourse on unicorn.—1584.

These have been translated into Latin, English, Dutch and German; but the collaboration of Malgaigne in 1840 with his historical and critical introduction is a masterpiece of learning and labour. The reader of his works will note how frequently he refers to his sources of information, his graphic descriptions, his care of detail in every case.

As a man the reader will quickly form his own opinion. Having a healthy body, his illnesses were few and usually due to accidents: a broken leg, a viper's sting, attempted poisoning by sublimate, an attack of the plague make up the list. In living he was temperate, even though enjoying good wine on occasions.

In conclusion, though separated by two centuries, there is somewhat of a comparison between Ambroise Paré and John Hunter. They both made constant appeal to experience, they both were indefatigable in questioning and comparing notes. The note of John Hunter's maxim: "Don't think, try," constantly occurs in the works of the former. They both had experience in gunshot wounds, were great lovers of animals and their ways, and they spent their money lavishly when it came. To the men of the present day his methods are antiquated, his theories are wrong, and his books are sought only by the book fancier or librarian; and yet, for three centuries he kept his hold on men by force of character and integrity and by these alone.

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